

COMPLETE SET OF PENDING CLAIMS

1. (Currently Amended) A method for ~~treating a~~ processing one or more workpiece comprising the steps of:
placing the workpiece into a chamber;
heating a liquid;
applying the heated liquid onto ~~a surface of the workpiece in the chamber,~~
with the heated liquid forming the heated liquid into a boundary layer on the
workpiece; surface; and
~~moving ozone through the boundary layer to the surface of the workpiece.~~
providing ozone gas into the chamber, wherein ozone gas moves via
diffusion from a region of higher ozone concentration, at the gas/liquid interface at
the surface of the heated liquid boundary, through the heated liquid boundary layer,
and to a region of lower ozone concentration at the liquid/solid interface at the
surface of the workpiece.
- 2-4. (Withdrawn)
5. (Previously Amended) The method of claim 1 further comprising the steps of: exposing the surface to electromagnetic radiation.
6. (Withdrawn)
- 7-9. (Cancelled)
10. (Original) The method of claim 1 wherein the liquid comprises de-ionized water and a member selected from the group consisting of: hydrochloric acid; sulfuric acid; and ammonium hydroxide.

11. (Original) The method of claim 1 further including the step of controlling the thickness of the boundary layer by rotating the workpiece.

12. (Original) The method of claim 1 further including the step of controlling the thickness of the boundary layer by adding a surfactant to the liquid.

13. (Previously Amended) The method of claim 1 wherein the step of forming the boundary layer comprises the step of spraying the liquid onto the surface of the workpiece at a controlled rate.

14. (Currently Amended) The method of claim 1 wherein the ozone is introduced as a dry gas into the ~~environment around the liquid boundary layer chamber from an ozone generator and diffuses into and through the liquid boundary layer, to react with a surface of the workpiece.~~

15. (Currently Amended) The method of claim 1 wherein at least some of the ozone is injected or mixed into the liquid outside of the chamber and dissolves into the liquid, before the liquid is applied onto the workpieces surface of the workpiece.

16. (Cancelled)

17. (Original) The method of claim 1 further comprising the step of treating the workpiece in a process chamber having a pressurized atmosphere.

18. (Original) The method of claim 17 further comprising the step of supplying steam under pressure into the process chamber.

19. (Cancelled)

20. (Original) The method of claim 1 further comprising the step of

irradiating the workpiece with UV light, to enhance reaction kinetics.

21. (Currently Amended) The method of claim 1 further comprising

the steps of rinsing and drying the workpieces.

22. (Original) The method of claim 1 wherein the liquid comprises

superheated de-ionized water.

23-30. (Withdrawn)

31. (Currently Amended) A method for treating a workpiece

comprising the steps of:

placing the workpiece into a chamber;

heating a liquid;

applying the liquid onto a surface of the workpiece within the chamber, with the liquid comprising de-ionized water, and at least one of hydrochloric acid and hydrofluoric acid;

forming the liquid into a boundary layer on the surface of the workpiece; and

~~moving ozone through the boundary layer to the surface of the workpiece~~
~~where the ozone reacts with the surface of the workpiece~~

providing ozone gas into the chamber, wherein ozone gas moves via
diffusion from a region of higher ozone concentration, at the gas/liquid interface at
the surface of the heated liquid boundary, through the heated liquid boundary layer,
and to a region of lower ozone concentration at the liquid/solid interface at the
surface of the workpiece.

32. (Currently Amended) A method for treating a workpiece

comprising the steps of:

placing the workpiece into a chamber;

heating a liquid;

~~applying~~ spraying the heated liquid onto a surface of the workpiece, ~~with the~~]

~~liquid~~

~~comprising de-ionized water and a surfactant;~~

forming the heated liquid into a boundary layer on the surface of the]

workpiece;

controlling the thickness of the boundary layer; and

~~moving ozone through the boundary layer to the surface of the workpiece to
react with the surface of the workpiece~~

providing ozone gas into the chamber, wherein ozone gas moves via
diffusion from a region of higher ozone concentration, at the gas/liquid interface at
the surface of the heated liquid boundary, through the heated liquid boundary layer,
and to a region of lower ozone concentration at the liquid/solid interface at the
surface of the workpiece.

33. (Withdrawn)

34. (Previously Added) The method of claim 1 wherein the ozone is
provided separately from the heated liquid.

35-36. (Withdrawn)

37. (Previously Added) A method for treating a workpiece comprising the steps of:

- heating a liquid;
- spraying droplets of the heated liquid onto a surface of the workpiece at a controlled rate;
- controlling the size of the droplets sprayed onto the surface of the workpiece;
- forming the heated liquid into a boundary layer on the surface of the workpiece; and
- diffusing ozone through the boundary layer, to cause a reaction at the surface of the workpiece.